EXHIBIT E

REPORT OF MEASUREMENTS

A. TEST REPORT

The V-series Proximity Lock was tested and found to comply with the limits imposed by the FCC "Code of Federal Regulations", Title 47, Part 15, Subpart C, for an intentional radiator operating at 125 kHz.

The attached test report describes the results of the test in detail.

FCC ID: NQ7HB60339

ELITE ELECTRONIC ENGINEERING COMPANY
1516 CENTRE CIRCLE
DOWNERS GROVE, ILLINOIS 60515-1082

ELITE PROJECT: 26273 DATES TESTED: January 29 - 30, 1998

TEST PERSONNEL: Daniel J. Farley

TEST SPECIFICATION: FCC Part 15, Subpart C for Intentional Radiators

ENGINEERING TEST REPORT NO. 20408

MEASUREMENT OF RF EMISSIONS

FROM A MODEL V-SERIES PROXIMITY LOCK

(HID VERSION)

FOR: Best Lock Corporation
Indianapolis, IN

PURCHASE ORDER NO.: 168105

Report By: Daniel J. Farley for

Approved By: Raymond J. Klouda
Raymond J. Klouda
Registered Professional
Engineer of Illinois - 44894

ENGINEERING TEST REPORT NO. 20408

ADMINISTRATIVE DATA AND SUMMARY OF TESTS

DESCRIPTION OF TEST ITEM: Proximity Card Reader (LF Transmitter)

MODEL NO: V-Series Proximity (HID Version) **SERIAL NO:** None Assigned

FCC ID: NQ7MB60341

MANUFACTURER: Best Lock Corporation

APPLICABLE SPECIFICATIONS: FCC Part 15, Subpart C

QUANTITY OF ITEMS TESTED: One (1)

TEST PERFORMED BY: ELITE ELECTRONIC ENGINEERING COMPANY
Downers Grove, Illinois 60515

DATES TESTED: January 29 - 30, 1998

PERSONNEL (OPERATORS, OBSERVERS, AND CO-ORDINATORS):
CUSTOMER: No Best Lock personnel were present.

ELITE ELECTRONIC: Daniel J. Farley

ELITE JOB NO.: 26273

ABSTRACT: The V-Series Proximity Lock (HID version) does meet the radiated emission requirements of the FCC Part 15, Subpart C. The radiated emission level at 125 kHz (fundamental) was 84 dB below the limit. See data page 104 for more details.

ENGINEERING TEST REPORT NO. 20408

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ENGINEERING TEST REPORT NO. 20408

MEASUREMENT OF RF EMISSIONS

FROM A MODEL V-SERIES PROXIMITY LOCK

1.0 INTRODUCTION:

1.1 DESCRIPTION OF TEST ITEM: This report presents the results of radio interference measurements performed on a V-Series Proximity Lock (HID version), (hereinafter referred to as the test item). No serial number was assigned to the test item. The test item is an independent, intelligent, self-contained electronic access control device.

The lock can be opened when a special coded card is held near the reader. The presence of the card will wake up the electronics. The reader will then interrogate the card. If the correct code is detected, the lock will open.

The card reader is the HID Version proximity reader. When the card is detected, a low frequency (125 kHz) low power field is emitted from the reader. When a card is presented within the excitation field of the reader, the card is activated. When activated, the card will manipulate the excitation signal, add pulse code modulation, and send the new signal back to the reader. The reader decodes this signal and sends the code on to the controller which will determine what action is to be taken as a response the card presentation.

The antenna is internal and permanently attached.

The tests were performed for Best Lock of Indianapolis, IN.

1.2 PURPOSE: The test series was performed to determine if the test item meets the emission requirements of the FCC Part 15, Subpart

C, Sections for Intentional Radiators operating at 125 kHz. Testing was performed in accordance with ANSI C63.4-1992.

1.3 DEVIATIONS, ADDITIONS AND EXCLUSIONS: There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 APPLICABLE DOCUMENTS: The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart C, dated 1 October 1997
- ANSI C63.4-1992, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"

1.5 SUBCONTRACTOR IDENTIFICATION: This series of tests was performed by the Elite Electronic Engineering Company of Downers Grove, Illinois.

2.0 TEST ITEM SETUP AND OPERATION:

For all tests the test item was placed on a 80cm high non-conductive stand.

Power to the transmitter was supplied by an internal 6 VDC battery.

Since the test item was powered with a 6 VDC battery, it was ungrounded during the tests.

The test item was configured with a "test" mode so that it would transmit continuously. This mode was achieved by placing the key card in front of the sensor of the test item. Once the LED on the top of

the unit flashed rapidly, the card was taken away. Momentarily, the key card was put back in place. The LED flashing reduced to 1 per second rate which indicated that the test item was transmitting. The transmitter was turned off in the same fashion.

The battery voltage was periodically checked to ensure proper operation and maximum level.

3.0 TEST SITE AND INSTRUMENTATION:

3.1 TEST SITE: All preliminary testing was performed in a shielded enclosure at the laboratory of Elite Electronic Engineering Company. Final open field radiated emission tests were performed at Elite's open field test site located in Downers Grove, Illinois. The open field test site is located in a clear area and is equipped with a 1/4-inch wire mesh ground plane. The facility complies with the test site criteria in ANSI C63.4-1992 and Section 2.948 of the FCC Rules.

3.2 TEST INSTRUMENTATION: A list of the test equipment used can be found on Table I. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

4.0 REQUIREMENTS, PROCEDURES AND RESULTS:

4.1 POWERLINE CONDUCTED EMISSIONS:

4.1.1 REQUIREMENTS: Since the test item is powered by a 6 VDC internal battery and not through the public power lines, conducted emissions measurements do not apply.

4.2 RADIATED EMISSIONS:

4.2.1 REQUIREMENTS: The test item must comply with the requirements of FCC Part 15, Subpart C, Section 15.209(a).

4.2.2 PROCEDURES:

4.2.2.1 PRELIMINARY RADIATED - Prior to performing the open field radiated tests, the emissions from the test item were first located over the frequency band from 0.014 MHz to 1000 MHz by means of a preliminary radiated emissions test performed in the low ambient environment of a shielded enclosure. The preliminary tests were not used to determine the levels of the field intensities but rather as a guide during the open field tests as to the frequencies of significant emissions.

4.2.2.3 OPEN FIELD RADIATED MEASUREMENTS - For the open field radiated tests, the test item was placed on a 0.8 meter high non-conductive stand.

Measurements below 30 MHz:

A loop antenna was used for measurements below 30 MHz. Initially, the fundamental was measured at 3, 5 and 10 meter test distance to determine the propagation loss characteristics.

After completing the propagation loss measurements, measurements were made at each harmonic up to the 10th harmonic and at any significant spurious detected during the preliminary measurements.

The reading were made with the spectrum analyzer bandwidth set to 10 kHz using PEAK detection.

For each measurement, the test item was rotated to find a maximum level. The loop antenna was positioned to check both vertical and horizontal polarizations. The highest level was recorded at each test frequency.

Measurements above 30 MHz:

A bilog antenna was used for measurements above 30 MHz. The test distance was 3 meters.

The reading was made with the spectrum analyzer bandwidth set to 120 kHz using a QP detector.

Any significant emissions noted in the preliminary scan were checked. The signal levels were maximized by adjusting the antenna height and rotating the test item.

4.2.3 RESULTS: Preliminary radiated emission test results are presented on data pages 101 through 104. The open field measurements are presented on data page 105.

As can be seen, the emissions were well within the FCC limit. At the fundamental, 125 kHz, the emission level was calculated to be -58.4 dBuV/m at 300 meters which is 84 dB below the limit.

The readings at 3 meters were corrected to the reference distance of 300 or 30 meter using the propagation loss which was based on the data measured at 3, 5 and 10 meters.

Emissions above 30 MHz were from the digital circuits. These emissions were well below the limit. No open area measurements were made since the preliminary indicated that the emissions levels in this range were ambient and insignificant.

5.0 CONCLUSION:

It was found that the Best Lock Model V-Series Proximity Lock, does comply with the limits imposed by the FCC Part 15, Subpart C, for Intentional Radiators.

6.0 CERTIFICATION:

Elite Electronic Engineering Company certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specification.

The data presented in this test report pertains to the test item at the test date. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

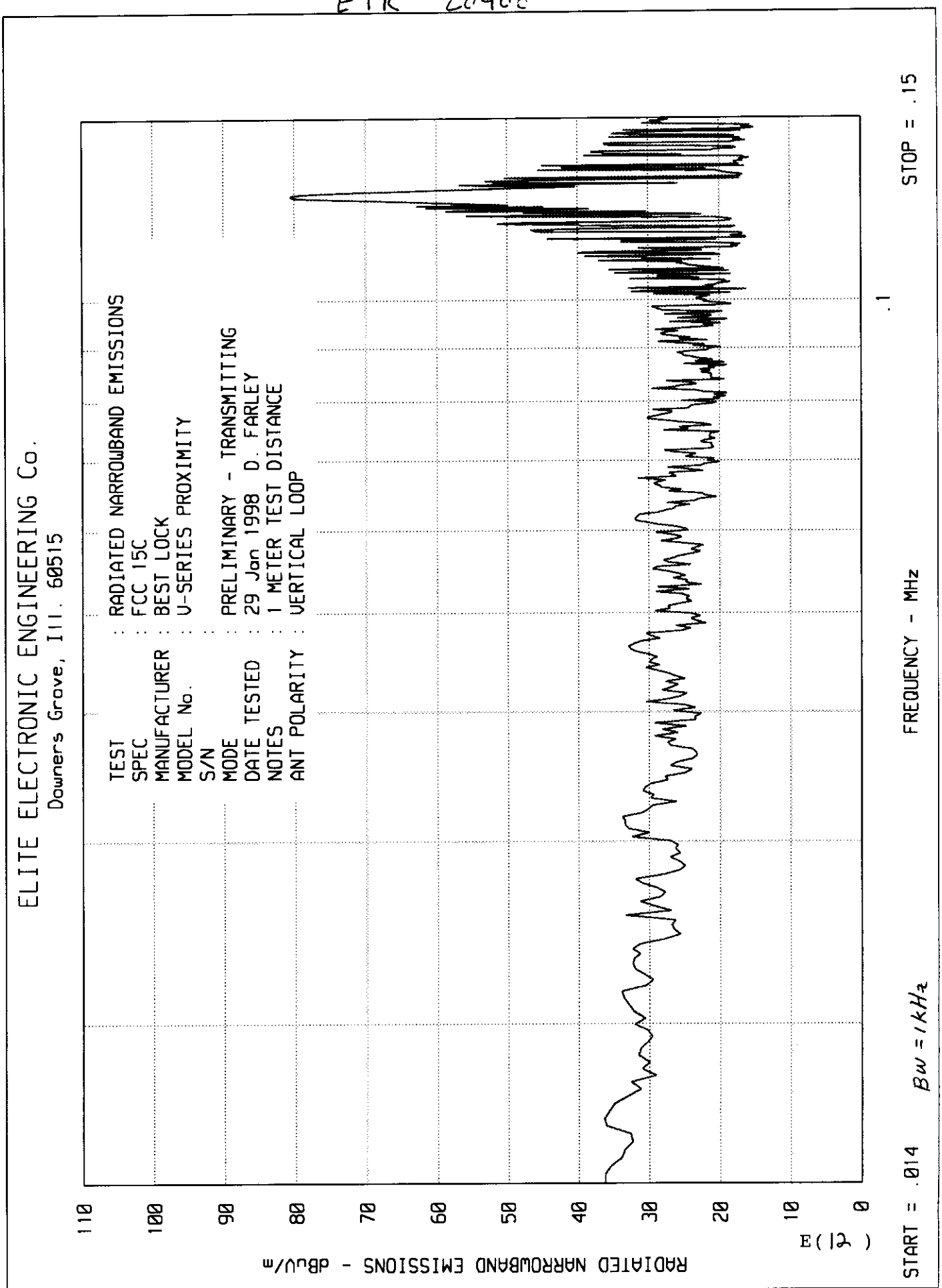
TABLE I: TEST EQUIPMENT LIST

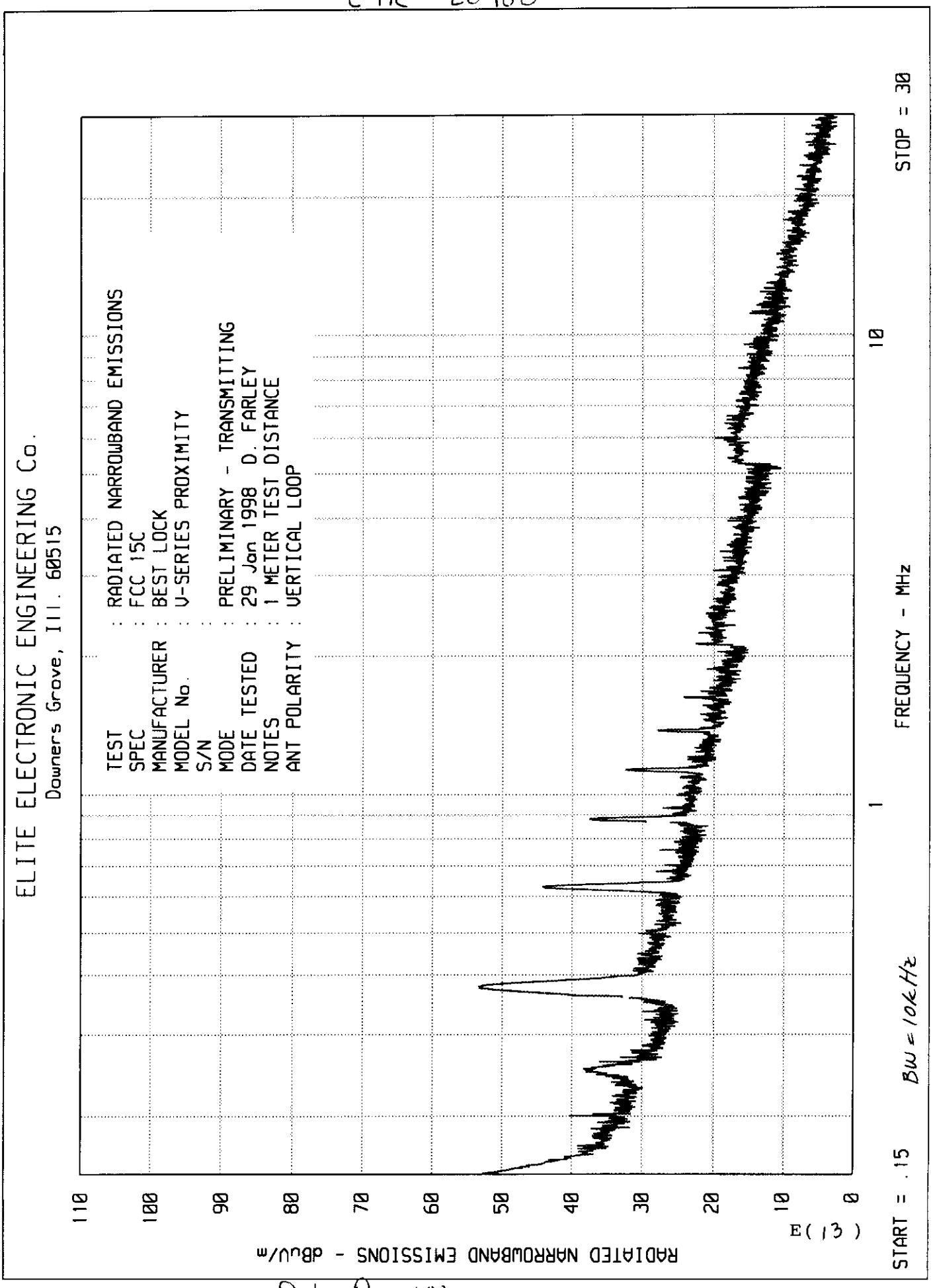
ELITE ELECTRONIC ENGINEERING

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Cal Inv	Due Date
Equipment Type: AMPLIFIERS								
APD1	PRE-AMPLIFIER	ELITE/AVANTEK	UA-104	1	0.001-500MHZ	01/13/98	NOTE 1	
Equipment Type: ANTENNAS								
NLG1	12" LOOP ANTENNA	EMPIRE DEVICES	LP-105	199	0.15-30MHZ		I/O	
NLK2	36" LOOP ANTENNA	EMPIRE DEVICES	LG-105	E-350	0.014-0.15MHZ		I/O	
Equipment Type: RECEIVERS								
RAB1	SPECTRUM ANALYZER	HEWLETT PACKARD	85680B	1818A00277	100HZ-1.5GHZ	01/21/98	12	01/21/99
RACC	PRE-SELECTOR	HEWLETT PACKARD	85685A RF	2648A00507	20HZ-2GHZ	01/21/98	12	01/21/99

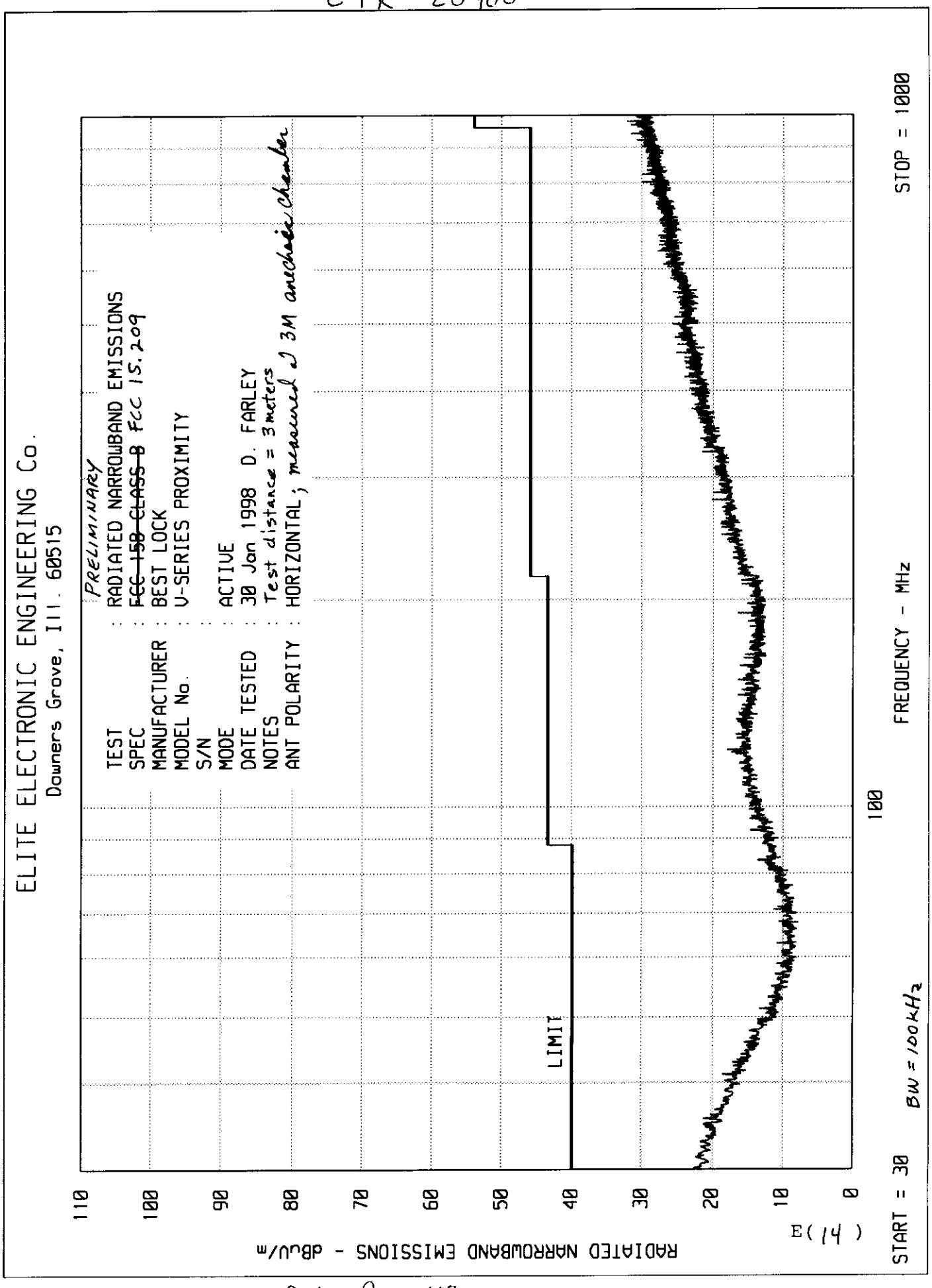
Cal. Interval: Listed in Months I/O: Initial Only N/A: Not Applicable

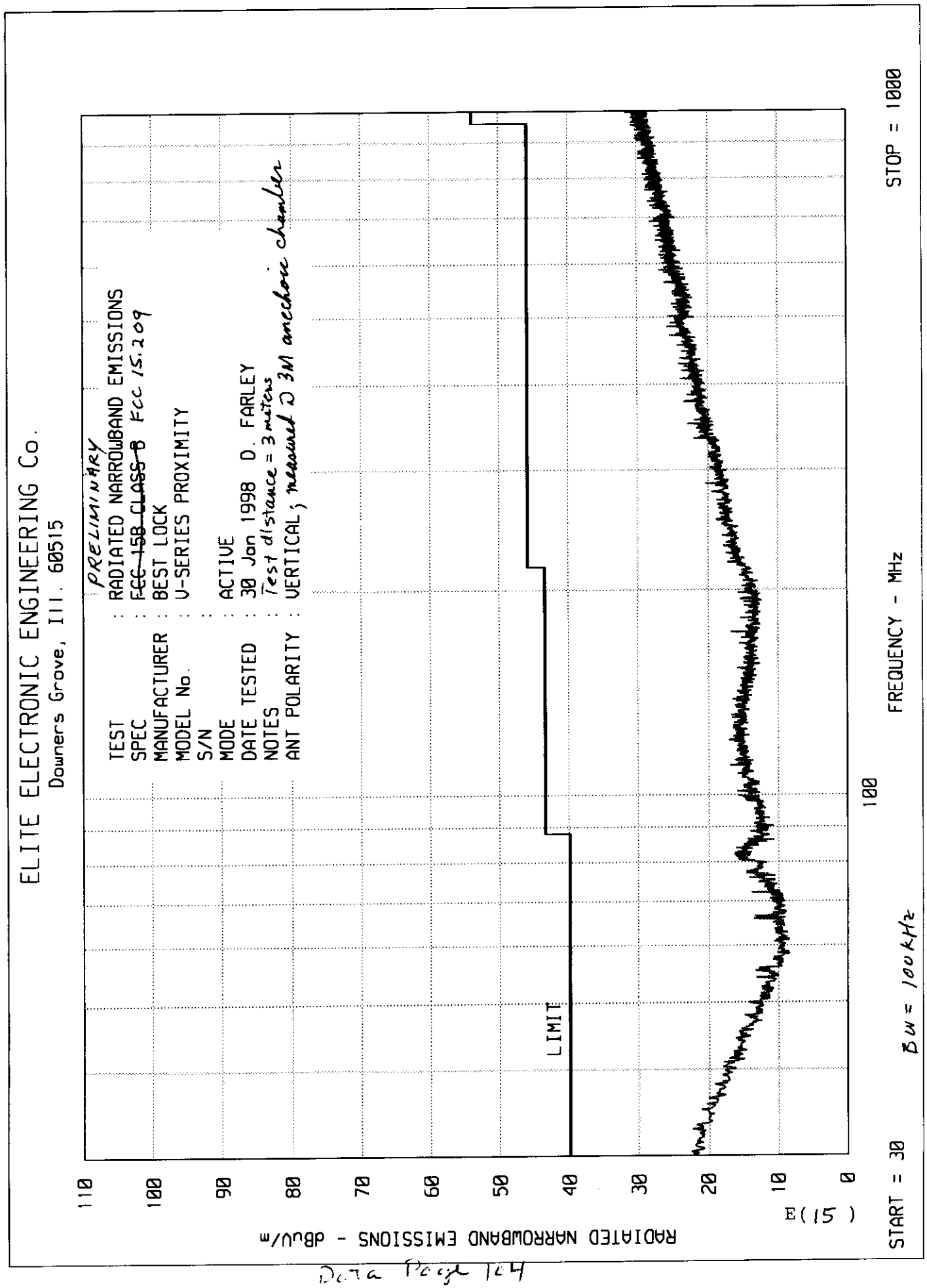
Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.


ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515
TEST : RADIATED NARROWBAND EMISSIONS
SPEC : FCC 15C
MANUFACTURER : BEST LOCK
MODEL No. : U-SERIES PROXIMITY
S/N :
MODE : PRELIMINARY - TRANSMITTING
DATE TESTED : 29 Jan 1998 D. FARLEY
NOTES : 1 METER TEST DISTANCE
ANT POLARITY : VERTICAL LOOP
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
E( )
START = .014
Bw = 1kHz
FREQUENCY - MHz
.1
STOP = .15



Data Page 102


ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515
PRELIMINARY
TEST : RADIATED NARROWBAND EMISSIONS
SPEC : ~~FCC 15B CLASS B~~ FCC 15.209
MANUFACTURER : BEST LOCK
MODEL No. : U-SERIES PROXIMITY
S/N :
MODE : ACTIVE
DATE TESTED : 30 Jan 1998 D. FARLEY
NOTES : Test distance = 3 meters
ANT POLARITY : HORIZONTAL; measured in 3M anechoic chamber
LIMIT
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
E(14)
START = 30
100
FREQUENCY - MHz
STOP = 1000
BW = 100 kHz



Data Page 104

ENGINEERING TEST REPORT NO. 20408

MANUFACTURER : Best Lock Corporation
TEST ITEM : Wake up/Proximity reader Transmitter
MODEL : V-Series Proximity Lock
TEST : FCC 15(C) Open Field Radiated Emissions
FREQUENCY RANGE: 0.125 MHz to 1000MHz
DATE TESTED : 30 JAN 98
NOTES : Transmitting at 125 kHz
TEST DISTANCE : Measured at 3 meters unless otherwise noted, then corrected for FCC reference distance of 300 or 30 meters.
ANALYZER BW : < 30 MHZ: BW =10 KHZ; PEAK
≥ 30 MHZ: BW 120 KHZ; QP

PROPAGATION LOSS MEASUREMENTS:

Freq MHz	Test Dist M	Mtr Rdg dBuV	PreAmp Gain dB	Total dBuV
0.125	3	34.1	0.0	34.1
	5	43.0	-20.0	23.0
	10	21.4	-20.0	-1.4

From Figure 2, Propagation Loss of -60 dB per decade selected.

RADIATED EMISSION LEVELS:

Freq MHz		Ant Pol***	Mtr Rdg dBuV		PreAmp Corr dB	Ant Fac dB	Cable Loss dB	Prop. Loss dB	Total dBuV/m	Limit dBuV/m
0.125		V	34.1		0.0	27.5	0.0	-120.0	-58.4	25.7 ✓
0.250		V	21.1	*	-20.0	37.5	0.0	-120.0	-81.4	19.6 ✓
0.375		V	15.9	*	-20.0	34.3	0.0	-120.0	-89.8	16.1 ✓
0.500		V	21.4	*	-20.0	36.3	0.0	-60.0	-22.3	33.6 ✓
0.625		V	23.2	*	-20.0	34.3	0.0	-60.0	-22.5	31.7
0.750		V	32.6	*	-20.0	32.7	0.0	-60.0	-14.7	30.1
0.875		V	15.3	*	-20.0	31.5	0.0	-60.0	-33.2	28.6
1.000	AM	V	81.0	*	-20.0	32.8	0.0	-60.0	33.8**	27.6
1.125		V	13.3	*	-20.0	31.9	0.0	-60.0	-34.8	26.6
1.250		V	11.1	*	-20.0	30.5	0.0	-60.0	-38.4	25.7

* AMBIENT

** LEVEL DUE TO AM BROADCAST STATION NOT THE TEST ITEM. PRELIMINARY SCAN SHOWS THAT THE LEVEL FROM THE TEST ITEM IS NOT SIGNIFICANT.

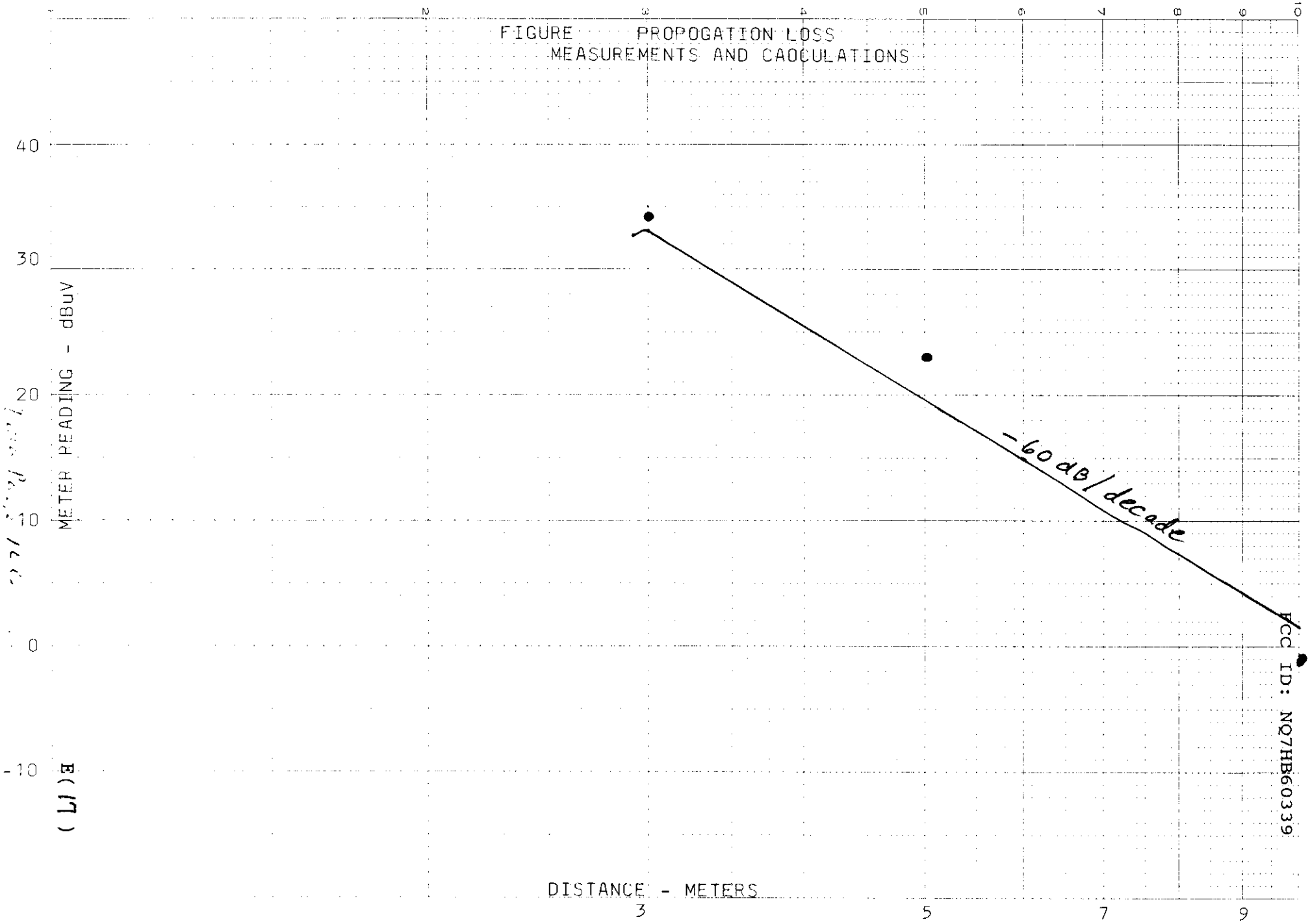
*** HORIZONTAL POLARITY CHECKED, LEVELS WERE LESS THAN OR EQUAL TO VALUES FOR THE VERTICAL.

Checked By:

NO. 340R-L110 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
1 CYCLES X 10 DIVISIONS PER INCH

DIETZGEN CORPORATION
MADE IN U.S.A.

FIGURE PROPOGATION LOSS
MEASUREMENTS AND CAOCULATIONS



FCC ID: NQ7HB60339

EXHIBIT D

INSTRUCTION MANUAL

A. SERVICE MANUAL

The service manual for this product have been included as Exhibit D.